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J. Stephens
56-03

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicants: Eliyahou Harari et al.
Assignee: SanDisk Corporation
Title: FLASH EEPROM SYSTEM
Serial No.: 10/000,155 Conf. No.: 8242
Examiner: Mai, Son Luu Filing Date: 10/30/01
Docket No.: SNDK.A06US8 Group Art Unit: 2818

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Lauren Bonie
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COMMISSIONER FOR PATENTS
WASHINGTON, D. C. 20231

RESPONSE

Dear Sir:

These comments are responsive to the Official Action mailed on January 31, 2003. The Office Action rejected claims 63-97 under 35 U.S.C. 112, first paragraph. This rejection is respectfully submitted to be in error.

More specifically, the Office Action states that, with respect to independent claims 63, 82, 85, 87, 89, 91 and 96, the specification lacks support for a controller having the various elements recited in these claims, stating:

The controller as shown in figures 2 and 6 of the application does not include a memory array as now claimed in independent claims 63, 82, 85, 87, 89, 91 and 96. On the contrary, a defect management engine in Kirihata et al. (U.S. Patent 6,141,267) comprises

The Office Action then goes on to list various elements (including their reference numbers) of an embodiment of the Kirihata. However, none of these claims specify a

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controller. (The only one of the pending claims to mention a controller is claim 70.) It is respectfully submitted that the Examiner is improperly reading the specification of the source patent of these claims (Kiriata et al., U.S. Patent 6,141,267), and of a particular embodiment of that patent, into the claims. That is, the rejection alleges lack of support for language that does not appear in the claims; namely, that the recited elements of these claims are not part of a controller. The appropriate question is whether the present application provides support for the claims as they are written, not whether it provides support for language not found in the claims.

Since none of claims 63, 82, 85, 87, 89, 91 and 96 refer to a controller, the Applicants find the allegation that the disclosure does not provide support for language that is not in the claims to be misplaced. The disclosure need not provide support for language that is not in the claims and since none of these claims refer to a controller, it is respectfully submitted that the Office Action's rejection of claims 63, 82, 85, 87, 89, 91 and 96 under 35 U.S.C. 112, first paragraph, is improper and needs to be withdrawn. Rather, it is respectfully submitted that the claims are fully supported by the "Defect Mapping" section of the present application, beginning on page 14, line 13.

The Office Action also rejects claims 65, 83, and 97, due to a lack of support for "means for overriding". This is described, for example, on page 19, lines 17-26:

If the address is determined to be a bad location, by a match at the output of the comparator 521, the bad bit from the memory received by the receiver 515 is replaced by the good bit for that location. The good bit is obtained from the alternative defects data file 517. This is done by switching the multiplexer 523 to receive the good bit from the alternative defects data file instead of the bad bit from the receiver 515, as the data is sent to the FIFO 519.

The reference numbers are to elements of Figure 6. Consequently, it is also respectfully submitted that the Office Action's rejection of claims 65, 83, and 97 under 35 U.S.C. 112, first paragraph, is also not well founded.

The Office Action also rejects claims 68, 70-72, and 95, due to a lack of support for "means for programming addresses". This is the updating of the defect map, described, among other places, on page 20, lines 25-29:

This may be used by the controller 31 to update the defect map associated with the sector in which the defective cell is detected. In this manner, hard errors are constantly removed from the Flash EEprom system.

(The defect map is shown as 409 of Figure 5, introduced on page 17, lines 6-8: "The addresses of the defective cell and the backup cell are stored as defect pointers in the defect map 409.") Consequently, it is also respectfully submitted that the Office Action's rejection of claims 68, 70-72, and 95 under 35 U.S.C. 112, first paragraph, is also not well founded.

(It should be noted that U.S. patent application serial number 204,175, now patent number 5,095,344, is incorporated into the present application by reference and consequently forms an integral part of the application. It is referred to in several places, for example on page 22, lines 11-17. Concerning the programming elements themselves, these are shown in Figure 11e of the 5,095,344 patent.)

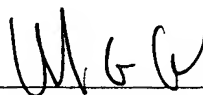
Concerning the "means for enabling a single-bit and multi-bit redundancy replacement" of claim 73, "said multi-bit redundancies" of claim 74, and "means for enabling a variable bit size redundancy replacement" of claim 75, the "Defect Mapping" portion of the present application describes the remapping process both on the cellular level (where a cell may be single bit or multi-bit) and on the sector (which is multi-bit) level. The cellular level process is described, for example, beginning on page 16, line 23. The sector level process is described, for example, beginning on page 23, line 12. In particular, "a variable bit size redundancy replacement" is described beginning at page 23, lines 12, since the process has provision for remapping of a whole sector if the number of defective cells with that sector becomes too large. Therefore, it is also respectfully submitted that the Office Action's rejection of claims 73-75 under 35 U.S.C. 112, first paragraph, is also not well founded.

Concerning the "group of wordline drivers" of claims 79 and 81 and "sense amplifiers" of claim 80, these are shown, for example, in Figure 11e of U.S. patent number 5,095,344. As noted above, this patent is incorporated by reference into the present application and consequently forms an integral part of the present application. More specifically, Figure 11e shows the wordline drives "WORD LINE PROGR./READ PULSING" and the sense amplifiers "SENSE AMP. 0", "SENSE AMP. 1" "SENSE

AMP. 2", and "SENSE AMP. 3". Consequently, it is also respectfully submitted that the Office Action's rejection of claims 79-81 under 35 U.S.C. 112, first paragraph, is also not well founded.

Therefore, it is respectfully submitted that the Office Action's rejection of claims 63-97 under 35 U.S.C. 112, first paragraph, is not well founded and should be withdrawn. Reconsideration of claims 63-97 (which are respectively copies of claims 1-3, 5, 7-9, 14-16, 18, 20-21, 25-27, 31-35, 37, 39-46, 48 and 50-53 of U.S. patent no. 6,141,267 of Kirihata *et al.*) and a prompt indication of their allowability are respectfully requested. Additionally, it is believed that claim 63 of the present application (claim 1 of Kirihata) would be suitable as the count should an Interference be declared. In the meantime, however, if the Examiner has any questions about this request, application or disclosure statements, a telephone call to the undersigned is invited.

Respectfully submitted,



Michael G. Cleveland
Reg. No. 46,030

PARSONS HSUE & DE RUNTZ LLP
655 Montgomery Street, Suite 1800
San Francisco, CA 94111
(415) 318-1160
(415) 693-0194 (Fax)



2818

PARSONS HSUE & DE RUNTZ LLP

655 MONTGOMERY STREET, SUITE 1800 ♦ SAN FRANCISCO, CALIFORNIA 94111

Telephone: (415) 318-1160 ♦ Fax: (415) 693-0194

April 25, 2003

Commissioner For Patents
Washington, D.C. 20231

Re: Applicant(s): Harari, et al.
Assignee: SanDisk Corporation
Title: Flash Eeprom System
Application No.: 10/000,155
Examiner: Mai, Son Luu
Docket No.: SNDK.A06US8

Filing Date: October 30, 2001
Group Art Unit: 2818
Conf. No.: 8242

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Dear Sir:

Transmitted herewith are the following documents in the above-identified application:

- (1) Return Receipt Postcard;
- (2) This Transmittal Letter (in duplicate);
- (3) Response to Office Action;
- (4) Notice of Change of Address;

- ☒ No additional fee is required.
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CLAIMS AS AMENDED

Claims Remaining <u>After Amendment</u>	Highest No. Previously <u>Paid For</u>	Present <u>Extra</u>	<u>Rate</u>	Additional <u>Fee</u>
Total Claims	Minus	= 0	x \$18.00	\$ 0.00
Independent Claims	Minus	= 0	x \$84.00	\$ 0.00
<input type="checkbox"/> Fee of _____ for the first filing of one or more multiple dependent claims per application				\$
<input type="checkbox"/> Fee for Petition for Extension of Time				\$
Total additional fee for this Amendment:				\$ 0.00
<input checked="" type="checkbox"/> Conditional Petition for Extension of Time: If an extension of time is required for timely filing of the enclosed document(s) after all papers filed with this transmittal have been considered, an extension of time is hereby requested.				
<input checked="" type="checkbox"/> Please charge any additional fees required and credit any overpayment to our Deposit Account No. 502664.				
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Signature Gileen Bowen

Respectfully submitted,

W G D
Michael G. Cleveland
Patent Agent
Reg. No. 46,030